

| L Number | Hits | Search Text | DB | Time stamp |
|----------|------|---|--------------------|---------------------|
| 1 | 462 | BiMOS and @ad<20020614 | USPAT; US-PGPUB | 2004/05/07 16:58 |
| 2 | 232 | ((BiMOS and @ad<20020614) and base and emitter and source and drain and transistor | USPAT; US-PGPUB | 2004/05/07 16:56 |
| 3 | 86 | ((BiMOS and @ad<20020614) and base and emitter and source and drain and transistor) and buried | USPAT; US-PGPUB | 2004/05/07 16:17 |
| 4 | 86 | ((BiMOS and @ad<20020614) and base and emitter and source and drain and transistor) and buried) and (gate or electrode) | USPAT; US-PGPUB | 2004/05/07 16:17 |
| 5 | 60 | ((BiMOS and @ad<20020614) and base and emitter and source and drain and transistor and (gate with contact) | USPAT; US-PGPUB | 2004/05/07 16:50 |
| 6 | 41 | ((BiMOS and @ad<20020614) and base and emitter and source and drain and transistor and (gate with contact)) and (gate with polysilicon) | USPAT; US-PGPUB | 2004/05/07 16:56 |
| 7 | 2449 | base and emitter and source and drain and transistor and collector and buried and (gate or electrode) | USPAT; US-PGPUB | 2004/05/07 16:58 |
| 8 | 2324 | ((base and emitter and source and drain and transistor and collector and buried and (gate or electrode)) and @ad<20020614 | USPAT; US-PGPUB | 2004/05/07 16:58 |
| 9 | 2324 | ((base and emitter and source and drain and transistor and collector and buried and (gate or electrode)) and @ad<20020614) and (deep with collector) | USPAT; US-PGPUB | 2004/05/07 16:58 |
| 10 | 265 | ((base and emitter and source and drain and transistor and collector and buried and (gate or electrode)) and @ad<20020614) and (deep near3 collector) | USPAT; US-PGPUB | 2004/05/07 16:58 |
| 11 | 260 | ((base and emitter and source and drain and transistor and collector and buried and (gate or electrode)) and @ad<20020614) and (deep near3 collector)) and ((contact or electrode) near3 (emitter or base or collector or source or drain or gate or electrode)) | USPAT; US-PGPUB | 2004/05/07 17:00 |
| 12 | 258 | ((base and emitter and source and drain and transistor and collector and buried and (gate or electrode)) and @ad<20020614) and (deep near3 collector)) and ((contact or electrode) near3 (emitter or base or collector or source or drain or gate or electrode))) not ((BiMOS and @ad<20020614) and base and emitter and source and drain and transistor and (gate with contact)) and (gate with polysilicon) | USPAT; US-PGPUB | 2004/05/07 17:00 |

| L Number | Hits | Search Text | DB | Time stamp |
|----------|-------|--|----------------------------------|---------------------|
| 1 | 2 | emitter with "III/VI" | USPAT; US-PGPUB | 2004/05/07 17:53 |
| 2 | 2 | emitter same "III/VI" | USPAT; US-PGPUB | 2004/05/07 17:53 |
| 3 | 2 | emitter and "III/VI" | USPAT; US-PGPUB | 2004/05/07 17:53 |
| 4 | 0 | emitter and "III/VI" | EPO; JPO; DERWENT; IBM_TDB | 2004/05/07 17:53 |
| 5 | 360 | emitter and "VI" | EPO; JPO; DERWENT; IBM_TDB | 2004/05/07 17:54 |
| 6 | 561 | emitter same "VI" | USPAT; US-PGPUB | 2004/05/07 18:01 |
| 7 | 216 | (emitter same "VI") and bipolar | USPAT; US-PGPUB | 2004/05/07 18:02 |
| 8 | 154 | ((emitter same "VI") and bipolar) and base and collector and transistor | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 9 | 137 | ((emitter same "VI") and bipolar) and base and collector and transistor) and @ad<20020614 | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 10 | 14949 | emitter with (Gas or GaSe or GaTe or InS or InSe or InTe or TlS) | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 11 | 6309 | (emitter with (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 12 | 5332 | emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS) | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 13 | 2335 | (emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 14 | 1864 | ((emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar) and base and collector and transistor | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 15 | 1739 | ((emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar) and base and collector and transistor) and @ad<20020614 | USPAT; US-PGPUB | 2004/05/07 18:03 |
| 16 | 500 | ((emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar) and base and collector and transistor) and @ad<20020614) and buried and (gate or electrode) | USPAT; US-PGPUB | 2004/05/07 18:04 |
| 17 | 412 | ((emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar) and base and collector and transistor) and @ad<20020614) and buried and (gate or electrode)) and source and drain | USPAT; US-PGPUB | 2004/05/07 18:04 |
| 18 | 350 | ((emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar) and base and collector and transistor) and @ad<20020614) and buried and (gate or electrode)) and source and drain) and MOS | USPAT; US-PGPUB | 2004/05/07 18:04 |
| 19 | 67 | ((emitter near3 (Gas or GaSe or GaTe or InS or InSe or InTe or TlS)) and bipolar) and base and collector and transistor) and @ad<20020614) and buried and (gate or electrode)) and source and drain) and MOS) and (deep with collector) | USPAT; US-PGPUB | 2004/05/07 18:05 |

US-PAT-NO: 6207976

DOCUMENT-IDENTIFIER: US 6207976 B1

TITLE: Semiconductor device with ohmic
contacts on compound semiconductor and manufacture thereof

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Brief Summary Text - BSTX (26):

According to another aspect of the present invention, there is provided a semiconductor device comprising: a substrate having a principal surface; a collector layer formed on the principal surface of the substrate and made of a compound semiconductor material of a first conductivity type; a base layer formed on a partial surface area of the collector layer and made of a compound semiconductor material of a second conductivity type opposite to the first conductivity type; an emitter layer formed on a partial surface area of the base layer and made of a compound semiconductor material of the first conductivity type; a collector electrode formed on a surface of the collector layer where the base layer is not formed, the collector electrode being electrically connected to the collector layer with an ohmic contact; a base electrode formed on a surface of the base layer where the emitter layer is not formed, the base electrode being electrically connected to the base layer with an ohmic contact; an emitter electrode formed on a surface of the emitter layer and electrically connected to the emitter layer with an ohmic contact; and an intermediate layer disposed at least one area between the collector electrode and the collector layer, between the base electrode and the

base layer, or
between the emitter electrode and the emitter layer, the
intermediate layer
being made of a compound material containing Ga as a group
III element and S as
a group VI element and having a thickness of at least two
monolayers or
thicker.

Claims Text - CLTX (39):

an intermediate layer disposed at least one area between
the collector
electrode and the collector layer, between the base
electrode and the base
layer, or between the emitter electrode and the emitter
layer, the intermediate
layer being made of a compound material containing Ga as a
III group III
element and S as a VI group VI element and having a
thickness of at least two
monolayers or thicker.